

Butterflies of Majorca

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Since my visits to Majorca some years ago it had been my intention to study the material I collected there. For one reason and another this was delayed rather longer than I would have wished. When I started, the lack of any comprehensive and reasonably up to date information on the Rhopalocera of the island became immediately apparent. The most comprehensive work is that by Rebel. His initial paper dealing with 26 species from the Balearic islands was published in 1926. This was followed in 1934 by a supplementary note adding three more species. After a gap of 32 years Bretherton mentions 29 species from the islands, presumably based on Rebel's earlier work. In 1970 however, Manley and Allcard showed 31 species in their Check List, but their accompanying notes were not comprehensive and referred to only a few species of special interest.

The information given by Rebel is now more than 40 years old, and in some cases much older than that, where he refers back to even earlier reports for his evidence. In an endeavour to update this information I have examined the limited number of more recent reports that I have been able to trace. While Rebel, Bretherton, and Manley and Allcard have treated the Balearic Islands as a whole, my own work and all the other recent reports I have traced relate only to Majorca. This paper therefore is only concerned with the butterflies of Majorca and not the other islands of the group. I have no evidence that all the species that occur in Majorca also occur on the other islands, although probably most of them do. Majorca is however substantially larger than any of the other islands, having an area of 3390 sq km compared with Minorca's 760 sq km and a total of about 700 sq km for the rest, the largest of which is Ibiza.

PLATE XIX

- A) *Pseudotergumia fidia balearica* ssp. nov. male Holotype, upper-side. Formentor.
- B) *Pseudotergumia fidia balearica* ssp. nov. male Paratype, upper-side. San Agustin.
- C) *Pseudotergumia fidia balearica* ssp. nov. female Allotype, upper-side. Formentor.
- D) *Pseudotergumia fidia balearica* ssp. nov. female Paratype, upper-side. San Agustin.
- E) *Pseudotergumia fidia balearica* ssp. nov. male Holotype, under-side. Formentor.
- F) *Pseudotergumia fidia balearica* ssp. nov. female Paratype, under-side. Formentor.

All taken July 1965, Majorca

Most writers have commented upon the paucity of species found in Majorca. While it is well known that islands usually support less species than the neighbouring mainland areas this situation is particularly marked in this case. Undoubtedly the unsuitability of much of the habitat is a contributory factor. The island is very dry, especially in the summer months. Almost all the suitable areas are heavily cultivated and, while the mountains reach to 1500 m, they are often almost devoid of vegetation. The arid condition also result in many specimens from the island being less than normal size, especially in summer broods, because of dessication of larval food plants.

Majorca is 190 km from the Spanish mainland, 270 km from the North African coast and 420 km from Sardinia. It would be expected therefore that its butterfly population would be primarily influenced by that of Spain. This is however, not always the case. While all the 31 species listed by Manley and Allcard occur on the Spanish mainland, all but four also occur in North Africa and all but seven occur in Sardinia. As will be seen from the following notes on individual species however, the four absent from North Africa and five of the seven absent from Sardinia are rare or doubtful residents of Majorca.

As the more recent reports all relate to the months of April, May and July only, I have also included the earlier note by Smith as this deals with October. Reference to the authors in the notes on each species relate to their observations as follows:

D. Smith: Three weeks in October 1951, mainly round Palma.

Myself (1): 10th-31st July 1965, mainly in the south of the island.

Myself (2): 2nd-17th April 1966, Puerto Pollensa.

P. R. Grey: Two weeks in mid May 1966, no localities given.

B. R. Dickson: 10-22nd July 1966, Palma.

T. R. New: 2nd-14th April 1967, mainly near Palma.

S. N. A. Jacobs: 3rd-17th May 1970, Cala Mayor, Palma.

The following notes deal only with the 31 species listed by Manley and Allcard. A few other species have been mentioned in very early reports, including *Iphiclides podalirius* L. and *Parnassius apollo* L. both of which were discounted by Rebel pending further evidence which as far as I know has not been forthcoming.

Carcharodus alceae Esp. Only noted by New who records two worn specimens. The only other report I can find is that of Muschamp in 1904. This species does not appear to be common in Majorca.

Gegenes nostrodamus Fab. No recent report of this species, in fact a single male taken at Torrent de Polverin in the Sierra Burguesa west of Palma on 1st August 1932 (Rebel 1934)

appears to be the only record of the species from Majorca. Its present status on the island is thus in doubt, although it is a very inconspicuous species and it could well have escaped attention.

Papilio machaon L. Noted in all recent reports except that of Jacobs. The species is common and widespread in the island. Specimens from Majorca are quite distinct from those of the Spanish mainland. They are more heavily marked and have wider post discal bands. I have not seen third generation specimens but Smith records that his taken in October were also heavily marked. The size of Majorcan specimens is variable. The first generation is usually large, I have one female with a forewing measurement of 48 mm, however, Smith notes that his specimens were small.

A number of subspecies have been described from southern Europe and the Mediterranean area and the exact status and distribution of each I have found difficult to find. I consider that Majorcan specimens are not ssp. *hispanicus* Eller from the Iberian Peninsular, nor are they the central European ssp. *bigenerata* Vrtv. as suggested by New. While they show some similarity to some North African Specimens (ssp. *mauretanicus* Vrtv.), I consider them to be ssp. *sphyrus* Hübn. They closely resemble Verity's description and illustrations of this subspecies from southern Calabria, Sicily, Malta and Sardinia.

Leptidea sinapis L. I have found no recent records of this species. The last report I can find is of a single female taken between Esporlas and Banalbufar on 10th August 1932 (Rebel 1934). Earlier reports record the species from Alcudia. Its current status is thus in doubt.

Pontia daplidice L. Recorded in all recent reports except Grey and Jacobs. My specimens of this fairly common species illustrate well the reduction in size of Majorcan specimens already mentioned. While the spring form of this species is usually smaller than the summer one, in my Majorcan series the reverse is the case. Higgins and Riley give the male forewing measurement of this species as 21-24 mm. however, my July specimens from San Agustin on the western outskirts of Palma measure 17-21 mm. and average 19 mm.

Pieris rapae L. Noted by Smith, myself (1) and (2), Dickson and New. Smith and New found it to be very common, I found it less so. Those on the wing in April were normal, but my July specimens are small and pale with the usual grey dusting on the hindwings absent.

Pieris brassicae L. Only recorded by New, five specimens, and myself (1), one male. My single specimen was an interesting one, being very small and having the forewing spot in S3 present on the upperside, ab. *nigronotata* Jach.

Colias crocea Geoffroy. Noted in all reports except Jacobs. Most indicate, however, that it was not common although I found it quite numerous in some localities, especially near Santa Ponsa, west of Palma on the coast. My series of this species exhibits quite noticeable seasonal variation. The second generation (July) is usually smaller and the ground colour of the males is paler than those of the first generation (April). The upperside of the hindwings in the males of the first generation have a heavier and more extensive dusting of black scales. The females include both f. *helice* Hub. and f. *helicina* Obth.

Gonepteryx cleopatra L. Recorded by all except Jacobs. I found it quite common on both my visits. My specimens are the type ssp. *cleopatra* L. which also occurs in North Africa and Sardinia but not in Spain where it is replaced by ssp. *europaea* Vrtv. My Majorcan specimens are small and the orange area on the forewing of the males is less extensive than in ssp. *europaea* Vrtv. I have not found ssp. *balearica* Bubacek, described in 1920 as larger than normal with an almost uniform yellow-green underside in the males.

Gonepteryx rhamni L. Not noted in any recent reports. This species is not listed by Rebel, and Bretherton states that it does not occur in the Balearics. Manley and Allcard, however, include it in their check list. I understand from Mr Allcard in correspondence that it is included in his list on the basis of the report by Holford (1915). Rebel discounted Holford's report as a case of mistaken identity and having studied Holford's paper I consider this to be almost certainly the case. During his stay on the island Holford recorded his observations day by day. Between 16th February and 31st March he noted eight specimens of *G. cleopatra*, all of which were male. During the same period he also records five female *G. rhamni*. However he records no female *G. cleopatra* and no male *G. rhamni*. In the absence of any confirmed report of *G. rhamni*, it seems safe to assume that these unlikely records are in error and that the specimens listed as female *G. rhamni* were in fact female *G. cleopatra*. The only other mention of *G. rhamni* is that by Jones in 1906 who simply notes "*G. rhamni* and *cleopatra*—occasional specimens". These were observations of specimens on the wing and again were probably incorrect identifications. I can find no reliable evidence that this species occurs in Majorca.

Charaxes jasius L. Not mentioned in any of the recent reports. Manley and Allcard, however, state that the species is found in plenty on the island and they illustrate three specimens. Mr Allcard informs me that these were bred

from ova found on the island and that he found the species in late August and early September in 1958 and 1960. Rebel (1932) records it from Arta and Ratjada in the north-east of the island.

Pandoriana pandora D. & S. In recent reports only noted by myself (1). I took one large female at San Agustin, just west of Palma. I saw a few others in this area and also in the south-east corner of the island near Puerto de Campos.

Vanessa cardui L. Noted in all recent reports. Smith found it common in October and I found it common but worn in April. It was recorded as less common in other reports, Grey saw only one, New a few and I saw only one in July.

Vanessa atalanta L. Smith found this species commonly. I saw a few at Puerto Pollensa on my second visit and also found a fully grown larva which pupated and subsequently emerged when I returned home. New also notes it as fairly common.

Nymphalis antiopa L. No recent records of this species. Rebel notes it as very rare in the Balearics and the last actual report I can find is that by Muschamp in 1904. It is probably only a very occasional migrant to the island which would be at the southern extremity of its range. It does not occur in North Africa, Southern Spain or Sardinia.

Pararge aegeria L. Common in Majorca and recorded in all recent reports. Majorcan specimens are generally small, the average male forewing measurement of my specimens is 20 mm. The orange markings on the upperside are more extensive than in my specimens from southern France and northern Spain. The underside hindwing markings are distinctive. The submarginal area is pale mauvish and the ocelli are small. The usual dark wavy lines in the discal and post discal areas are very much reduced and in some cases absent. The light yellow post discal marking extending downwards from the costa is also much reduced or absent. In some specimens the submarginal mauve colouring extends inwards along V4. The impression is of a much less mottled appearance than usual in this species. Having studied a long series of *ssp. sardoa* Vrtv. from Sardinia I consider Majorcan specimens referable to this subspecies, although the underside hindwings tend to be somewhat darker and richer in colour than is usual in specimens from Sardinia and the lack of markings seems more extreme. I would however need to study a longer series from Majorca to confirm this latter point.

Lasiommata megera L. Smith records this species as probably the most abundant he encountered. I found it much less numerous although I saw it on both my visits. It was also noted by Dickson and New. As is well known, the Majorcan race of this species is interesting as a substantial proportion of specimens are ab. *intermedia* Muschamp, half way between the nominate race and ssp. *paramegaera* Hübner from Corsica and Sardinia.

Coenonympha pamphilus L. A common species recorded by all but Grey. My summer specimens are small and all *f. lyllus* Esp., some extreme. Spring specimens are darker.

Pyronia cecilia Vall. Noted by Grey, Dickson, New and myself (1). I found it common in July but almost all the specimens I saw were female. Grey records seeing only males in May. This would seem to be a species in which the difference in the emergence time of the two sexes is particularly marked. My Majorcan specimens appear identical to my specimens from the Costa Brava. As specimens from this latter area have been named ssp. *catalana* de Sagarra, Majorcan specimens seem referable to this subspecies. (Note: Grey's reference to *Maniola tithonus* is really to this species, he subsequently corrected this error).

Maniola jurtina L. The only recent record of this species is of the few seen by me in July. Thomson (1969) lists the Majorcan population as ssp. *hispulla* Esp. which also occurs in most of Spain, Sardinia and probably Corsica, but not in Africa where it is replaced by ssp. *fortunata* Alpheraky.

Pseudotergumia fidia L. Noted by Dickson and myself (1). I found this species at San Agustin among the pine woods and also near Formentor in the north of the island. I consider that the Majorcan race is a separate subspecies, distinct from both those in North Africa and on the European mainland. It is best marked subspecies of this species.

Pseudotergumia fidia balearica ssp. nov.

Upperside. Male: The ground colour is lighter than normal. The post discal marking on the forewings of this species are usually very faint or absent altogether, in ssp. *balearica* however they are prominent. There is one divided one in S4 and S5 and a second and larger one centred in S2 but extending into S1 and S3. In this subspecies the androconial bands are more noticeable than usual as they are the same pale colour as the post discal markings. The two ocelli on the forewings and the small white spots between them are normal size but the ocelli have faint pale rings round them.

Female: The markings of the female of this species are more distinctive and prominent than in the male. While there is a certain amount of individual variation, the North African subspecies usually differ from the European ones in two main respects. On the forewings the post discal markings tend to be better developed in the European subspecies, especially in ssp. *paleia* Fruhstorfer, but the yellow rings round the ocelli are usually absent. In the North African subspecies the reverse is the case, the post distal markings are poorly developed but the yellow rings are prominent. This is especially so in ssp. *hebitis* Rothsch. and also in ssp. *intermedia* Rothsch. Ssp. *balearica* combines the features of both ssp. *paleia* and ssp. *hebitis* in having prominent post discal markings and also well developed rings round the ocelli. As in the male, the ground colour is lighter than normal.

Underside. The underside of this species is different in North Africa and European specimens. North Africa ones have been named f. *albovenosa* Astant. as the nervures are more prominently marked with white giving the underside a more segmented look than in European specimens, especially on the hindwings. Ssp. *balearica* is of the European type, not f. *albovenosa*. The colouring is not the usual greyish but more buff coloured. The overall impression is of it being paler than normal with less contrast between the light and dark areas. This is particularly marked in the females some of which are very pale and washed out looking.

Size. The size of ssp. *balearica* is variable. My series was collected in two areas. The Holotype and Allotype were taken near Formentor, the male Holotype has a forewing measurement of 33 mm and the female Allotype 34 mm. Paratypes from this locality are of similar size, however those from San Agustin are smaller, the males are 28 mm and the females 30 mm.

My series was taken between 12th and 30th July 1965. The Holotype, Allotype, 3 male and 5 female Paratypes are in my collection.

Lycaena phlaeas L. New records three specimens, all f. *eleus* Fab. I found the species quite common in certain localities in July, especially at Santa Ponsa. All my summer specimens are f. *eleus* Fab., they are small but not so heavily suffused with black as my specimens from the Costa Brava. The only specimen I took on my second visit in April was not of this seasonal form but f. *caeruleopunctata* Ruhl.

Syntarucus pirithous L. Noted as very common and widespread by Smith. I found it common in July. New records it as less common but he found a few specimens near Genova. I found it commonest in the garden of the house in which we stayed in San Agustin where it was attracted to certain flowers. It also occurred at Santa Ponsa.

Lampides boeticus L. Two specimens recorded by Grey and also noted by Dickson. One found by New at Genova. I did not see this species on the island. This however, seems more a question of bad luck than because of its rarity.

Celastrina argiolus L. A few recorded by Smith, I found it in one locality near Soller in July and New noted one specimen from Palma. On examining my Majorcan specimens and checking them with specimens from other areas, I find that this species is represented in Majorca by ssp. *mauretanica* Rothsch. not the usual southern European ssp. *calidogenita* Vrtý. Ssp. *mauretanica* is mainly North African, but also occurs in Andalusia. Majorca is perhaps the northernmost extent of its range.

Aricia cramera Esch. Noted by Dickson, New and myself (I). New records this species as fairly common but I found it only in one place near Santa Ponsa. My specimens are small, the upperside ground colour is lighter than usual and the red markings are complete on all wings and well developed, particularly in the female. The underside ground colour is a rich brown.

Polyommatus icarus Rott. Smith, myself (1) & (2) and New. Probably the best known of the island's species, ssp. *balearica* Rebel. The main features of this subspecies are its small size and bright colouring. Smith took one female, I found it quite numerous in July and found one male at Puerto Pollensa in April. New notes it as common round Palma. Manley and Allcard record finding similar specimens on the Spanish mainland at Benidorm. This small subspecies may not therefore be restricted to the Balearics.

Lysandra bellargus Rott. Rebel (1926) showed this species with a question mark against it and expressed some doubt about earlier records. However, both Bretherton and Manley and Allcard list it. I know of only one recent report, Mr Allcard informs me that he found it flying in the grounds of the Fenix Hotel, Palma in the latter part of August 1960.

Nordmannia esculi Hüb. No recent evidence of this species from Majorca. In fact as far as I know, only one specimen has ever been recorded there and that was more than 40 years ago. A single female was taken on 19th Sept. 1932 at El Terreno, an area now absorbed into the suburbs of Palma (Rebel 1934). It does not occur in the other Mediterranean islands.

Nordmannia ilicis Esp. As far as I know this species has never been recorded from Majorca. Manley and Allcard

include it in their check list for the Balearics on the basis of a single record from Ibiza (de Sagarra 1920). This could have been a stray specimen, Ibiza is only 90 km. from the Spanish mainland and thus substantially nearer than Majorca. The Balearics are outside the normal range of this species which only reaches Northern Spain and does not occur in North Africa or Sardinia.

Callophrys rubi L. I found it at Puerto Pollensa in April and New records it as common in meadows round Palma and also further inland. My Majorcan specimens are the light ssp. *fervida* Stdgr. which is also found in Sicily, Sardinia, North Africa and parts of Spain.

On the basis of the above, there are 25 confirmed species on the island. The position of the remainder is more doubtful. There are a further three that have been recorded there in the past but the present status of which is in doubt, these are *G. nosrodamus*, *L. sinapis* and *N. esculi*. In addition *N. antiopa* probably occurs as a rare migrant. The remaining two on Manley and Allcard's list, *G. rhamnii* and *N. ilicis*, I do not consider occur in Majorca on current evidence. Despite its popularity as a holiday centre, information from the island is limited. I would be most grateful therefore, for any further information or unpublished records concerning the island's Rhopalocera, especially with regard to the doubtful species mentioned above and of course any additional ones. Any such information sent to me at Holmesdale Cottage, North Holmwood, Dorking, Surrey, would be very much appreciated.

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POSTSCRIPT

Since completing this paper I have seen the newly published book *Mariposas de la Peninsula Iberica* by Miguel R. Gomez Bustillo and Fidel Fernandez Rubio. The distribution maps in this fine publication show three additional species from Majorca, *Pieris napi* L., *Issoria lathonia* L., and *Chazara prieuri* Pierret. The latter is included on the basis of a single specimen taken at Mal-Pas de Formentor in the northernmost part of the island. No additional information is given concerning the other two species, but I understand in correspondence with Dr Gomez Bustillo that both were recorded by Senor J. Fernandez. The finding of *C. prieuri* is particularly interesting. The *I. lathonia* record comes as no surprise, the surprising thing is that such a strong migrant has not been

1973—A Remarkable Year

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(concluded from p. 219)

than we caught. I saw, and netted, one *Pyrausta cingulata* (Linn.). I had never seen so many plants of *Epipactis atropurpurea* (Hoffm.) as there were growing on the broken limestone on the Knott. Returning to the wood, I succeeded in boxing a perfect specimen of the usually very lively *taeniatum* off an ash stem.

Geoff was keen to introduce me to Meathop Moss, so after the briefest possible interlude for a meal, we hurried to that locality, so different from the places we had visited earlier in the day. It was good to see *Coenonympha tullia* (Müll.) in numbers — the first English specimens I had seen, and to net about a dozen of the local form of *Idaea muricata* (Hufn.). We also noted *Catoptria margaritella* (D. & S.) among lots of